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US 4089519

US 3608897

US 3494615

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A6D

Selected US specifications from IPC sub-classes

A63B A63K

(54) Starting block assembly for athletes

(57) A starting block assembly comprises a channel-shaped centre beam 10 having side flanges 16 each having a series of longitudinally spaced holes 18 for retaining a starting block unit 20 at a selected operative position along the beam 10, each block unit being lockable in this position against movement parallel and transverse to the rail. Preferably, each block unit has a support 22 slidable along the flange 16 and a starting block 24 pivotally mounted on the support 22 by an axle (28, fig.6) extending parallel to the beam 10. The axle (28) enables the block 24 to be pivoted between an operative position, in which a pin (36) on the block unit 20 enters a selected hole (18), and an adjustment position in which the pin (36) is swung clear of the flange to enable the block to be moved along the beam. A catch (30) prevents unwanted disengagement of the pin (36) from a selected hole. The angle of inclination of the foot plate 26 of each block 24 may be adjustable.

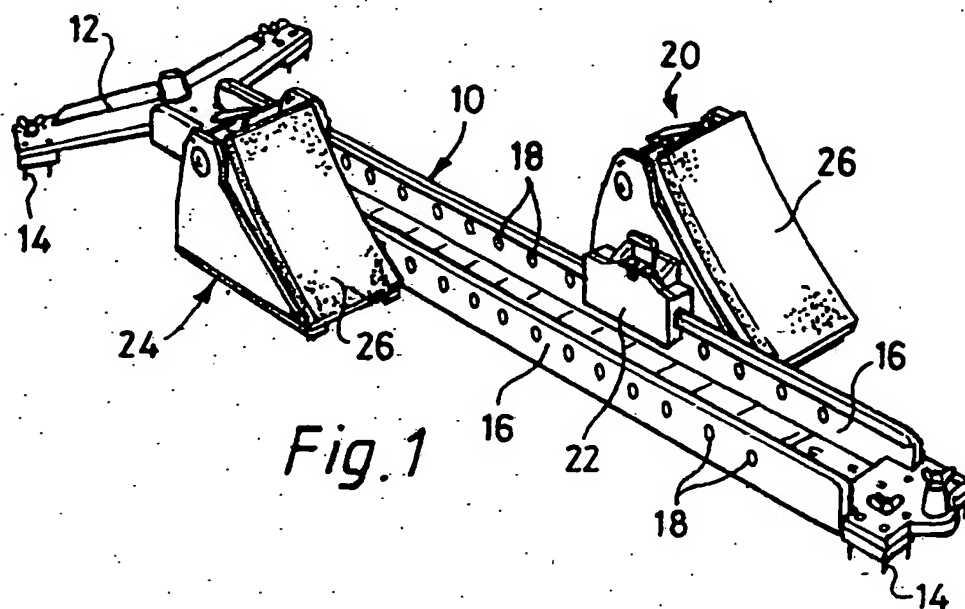
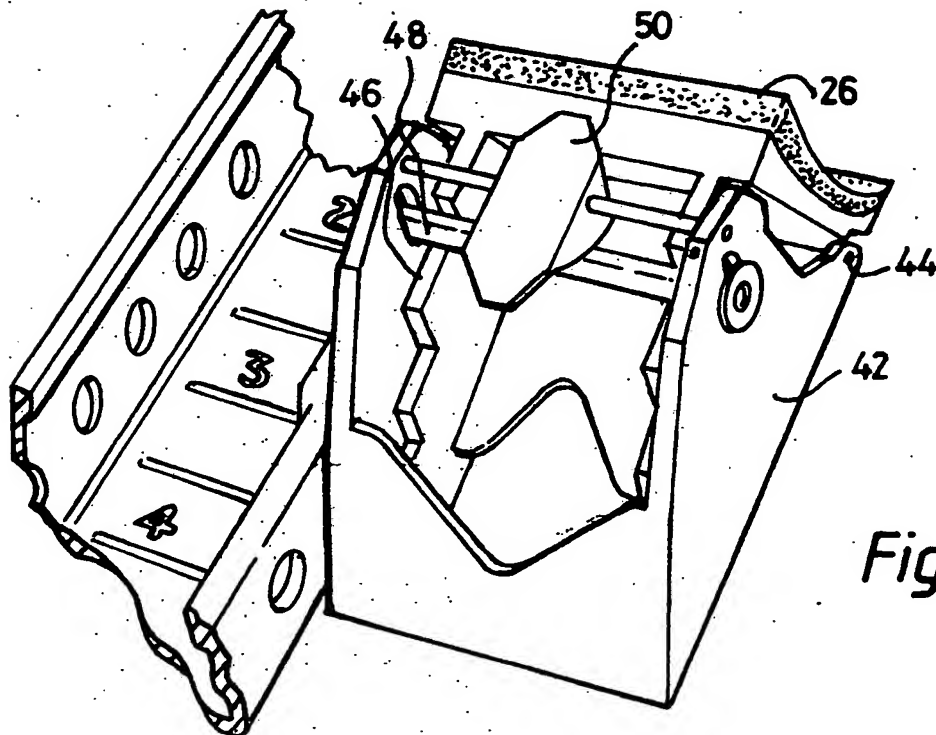
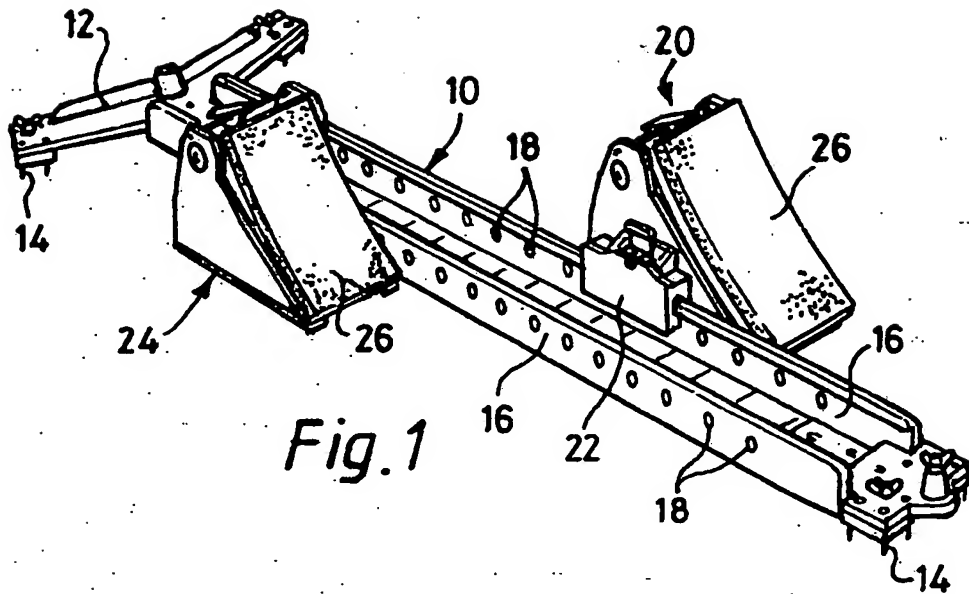


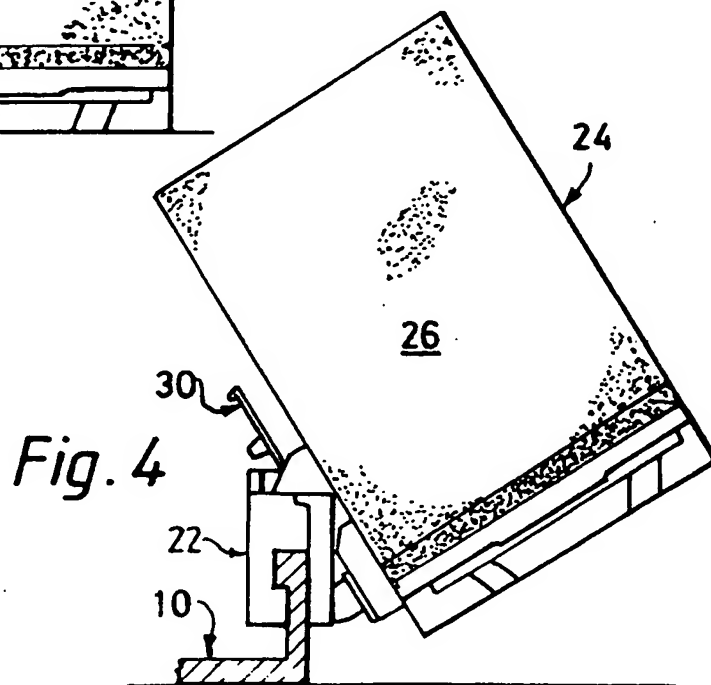
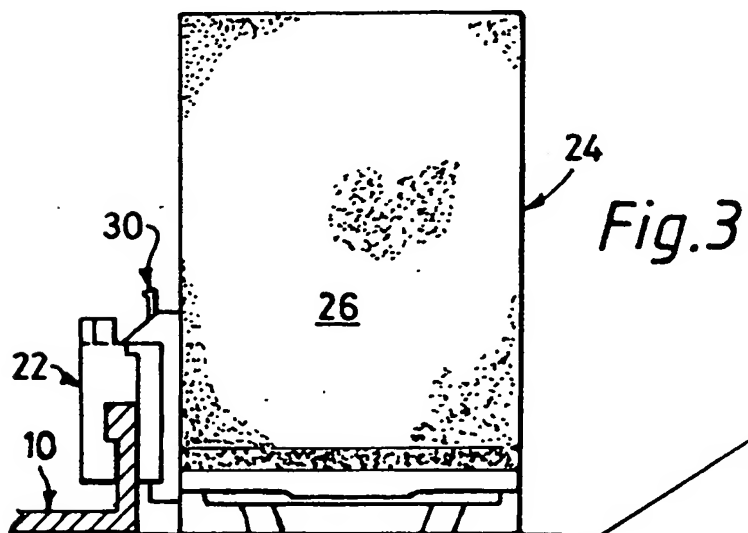
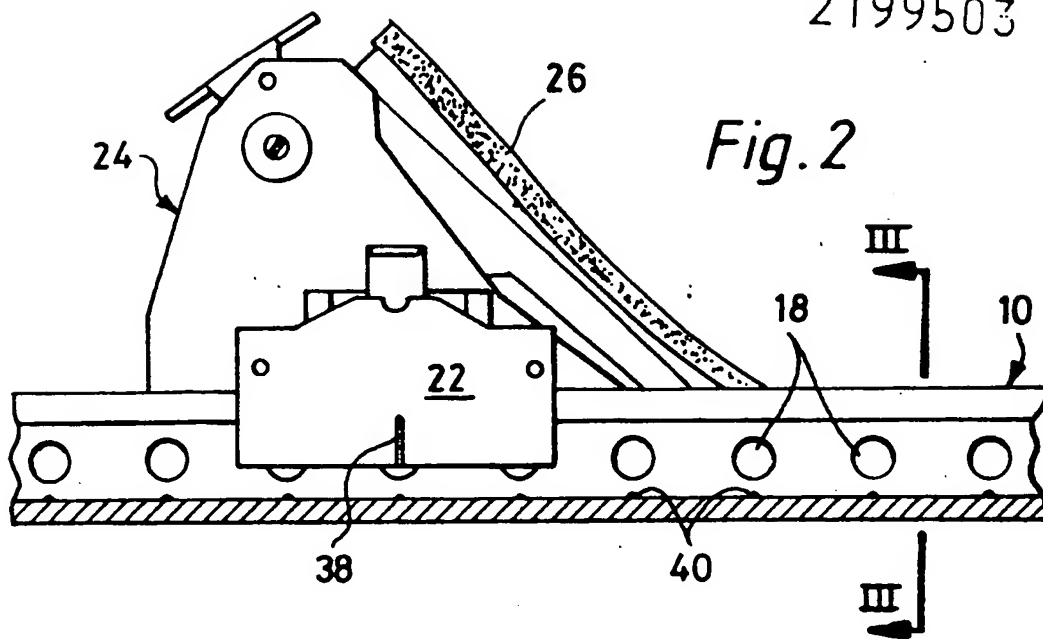
Fig. 1

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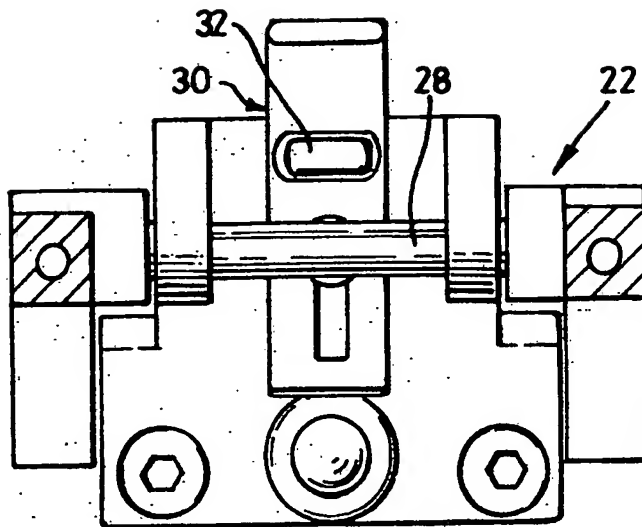


Fig. 5

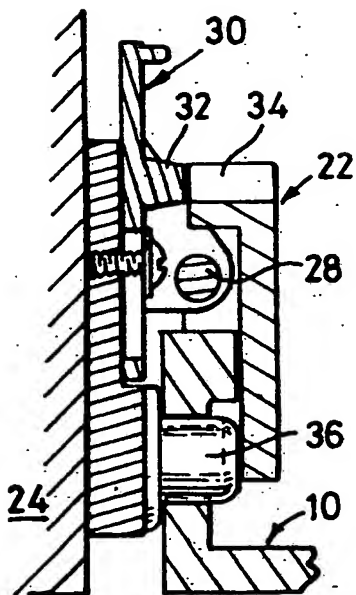


Fig. 6

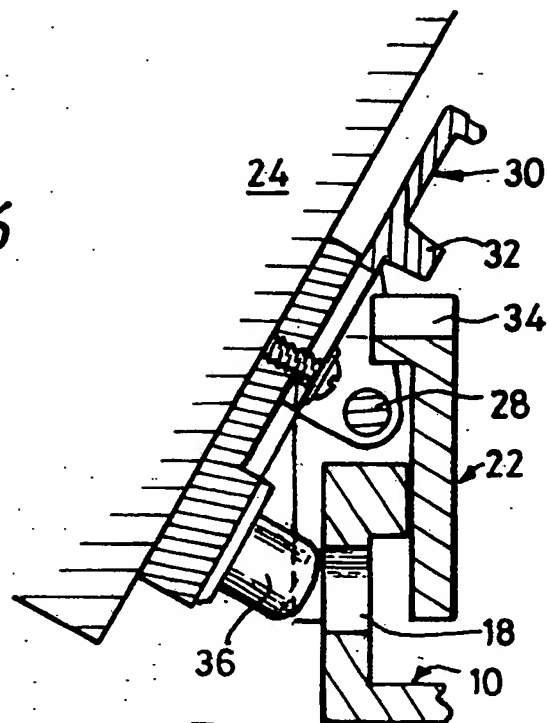
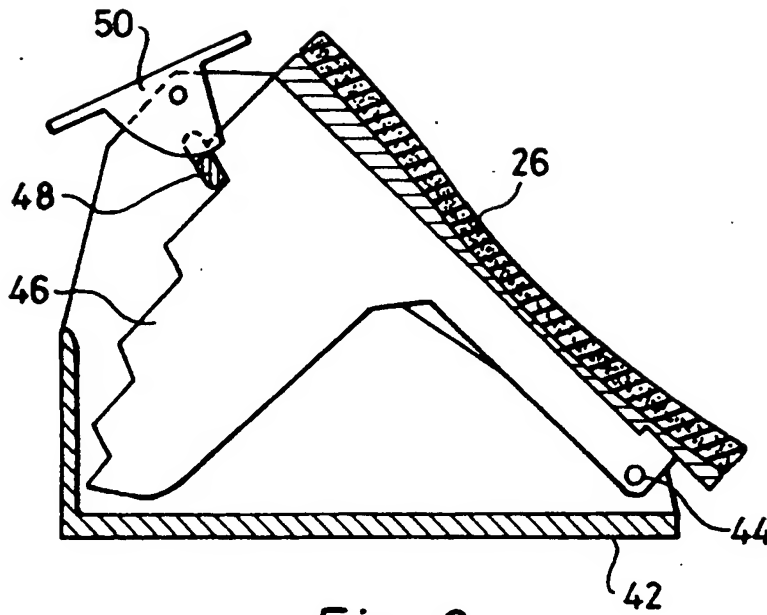
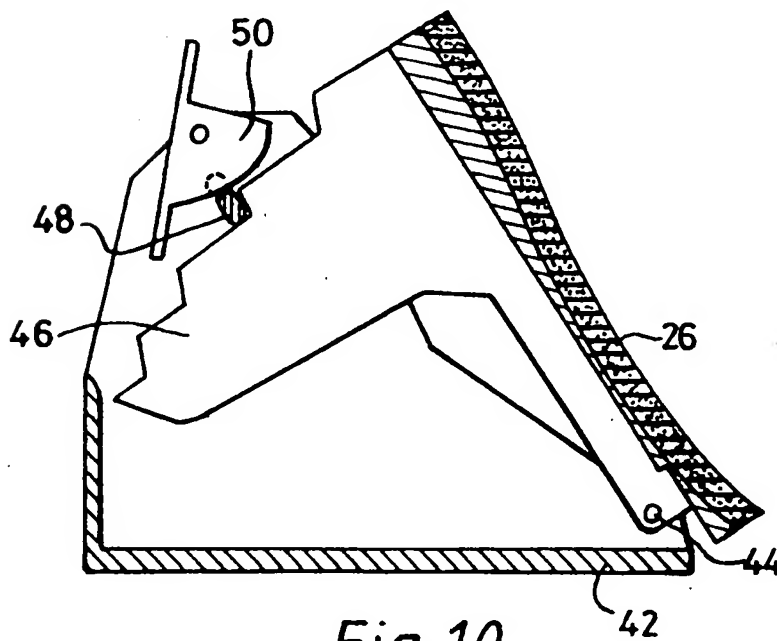


Fig. 7

*Fig. 9**Fig. 10*

Title: Starting Block Assembly

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Field of the invention

This invention relates to a starting block assembly, ie, a device for assisting an athlete to make a fast start at the beginning of a race.

Prior art

5 A known starting block assembly comprises a centre beam with starting blocks longitudinally adjustable in position on opposite sides thereof. The blocks lock against sliding along the beam by means of a pin which drops into one of a series of inclined slots formed in side webs of the centre beam. The position of the blocks is easily  
10 adjusted with this known starting block assembly, but the arrangement is disadvantageous in that, in use, the block-locking pin can be dislodged upwards out of the open upper end of the inclined slot, thereby to release the block, in particular when the athlete is applying foot pressure to  
15 the block at the start of a race.

It is an object of this invention to avoid the above described disadvantage.

The invention

20 According to one aspect of the invention, a starting block assembly comprises a centre beam and a pair of starting blocks longitudinally slidable along opposite sides

thereof, wherein locking means carried by the centre beam and each block cooperate so that, in any one of a series of positions of adjustment of starting block along the centre beam, the block is locked thereto not only against  
5 movement in the direction along the beam, but in both directions perpendicular to the length of the beam.

In a second aspect, the invention provides a starting block assembly comprising a centre beam and starting blocks longitudinally slidable along opposite sides  
10 thereof, the beam being apertured at a series of positions along the length thereof to receive a locking pin carried by each block and which enters an aperture by lateral movement in any one of a series of selected positions of longitudinal adjustment of a block along the centre beam.

15 In the preferred arrangement, each block is carried by a supporting member which grips the centre beam with freedom for movement only in the longitudinal direction of the beam, and the block is attached to the corresponding supporting member through a pivotal connection which  
20 permits the block to tilt relative to the supporting member in a plane normal to the length of the centre beam. In this arrangement, a catch is movable between two positions, in one of which, enabled only in the selected positions of longitudinal adjustment of the block, a  
25 locking pin on the block enters an aperture in the centre beam and an abutment carried by the catch engages the supporting member to prevent rotation of the block about its pivot, thereby locking the pin in the apertures. In the second position of the catch, the abutment is released  
30 from the supporting member to free the block for rotation relative to its support, whereby the pin can be withdrawn from the aperture to enable the supporting member, whilst

carrying the block in its turned position, to be longitudinally adjusted along the centre beam.

5 The catch is preferably a slotted slide carried by the block and the abutment blocks movement of the slide from the second position into the first position except when the locking pin in the block is aligned with a centre beam aperture, thereby to permit the block to assume its operative (upright) position relative to the supporting member and centre slide.

10 Preferably, cooperating markings are provided on the supporting member and the centre beam to facilitate selection of the longitudinal positions of adjustment of the support (and block) in which the support (and block) are locked to the centre beam.

15 Each starting block may conveniently comprise a principal component and a foot plate component. Conveniently, the foot plate component may be pivotally carried by the principal component to enable its angle of inclination to be adjusted about a horizontal axis transverse to the  
20 length of the centre beam. Such adjustment may be enabled by a stepped plate forming part of the foot plate component, which stepped plate is engaged by a locking bar displaceably carried by the principal component and  
25 lockable in engagement with a step by means of a rotating locking element also carried by the principal component.

#### Brief description of the drawings

A starting block assembly in accordance with the invention is exemplified with reference to the accompanying drawings in which:



Figure 1 is a perspective view of a starting block assembly;

5      Figure 2 is an enlargement taken in longitudinal cross-section through the centre beam and showing a starting block unit in side elevation;

Figure 3 is somewhat diagrammatic and shows a starting block unit in end elevation, in the condition in which it is locked against adjustment along the centre beam;

10      Figure 4 is a view similar to Figure 3, but showing the starting block unit in a condition in which longitudinal adjustment along the centre beam is enabled;

Figure 5 shows the detail of a supporting member which attaches to the centre beam and carries a starting block;

15      Figures 6 and 7 are detailed views for assisting understanding of the manner in which the starting block unit is locked and released from the centre beam;

Figure 8 is a cut away perspective view of a starting block unit for showing a means of foot plate adjustment; and

20      Figures 9 and 10 are views showing alternative positions of adjustment of foot plate.

#### Description of embodiment

Referring to Figure 1 of the drawings, a starting block assembly comprises a centre beam 10 having a cross-piece

12 at its rear end. The front end of the centre beam and the cross-piece are provided with depending spikes 14 for penetrating the ground (ie. the running track) to anchor the starting block assembly in position in use.

5 The centre beam 10 comprises a channel member with lipped side webs 16 each having a series of longitudinally spaced apertures 18. A starting block unit, generally referenced 20, is longitudinally adjustable along each side web. Each starting block unit comprises a support 22 slidable  
10 on the centre beam and a starting block proper 24 which is carried by the support. The starting block 24 has a foot plate 26 surfaced with a material suitable to serve as a rest for a spiked running shoe.

As will be clear from Figures 2 to 7, the support 22 grips  
15 the lipped webs of the centre beam to be restrained against movement except in the direction of the length of the centre beam. The starting block 24 is pivotally mounted to the corresponding support 22 by means of a pivot axle 28 extending parallel to the length of the  
20 centre beam. A catch 30 carried by the starting block has a first position, exemplified by Figures 3 and 6, in which it serves to lock the block 24 against pivotal movement relative to its support 22. This locking action is achieved by engagement of an abutment 32 on the catch with  
25 a part 34 of the support. However, the locking state is only enabled in one of a series of selected positions of longitudinal adjustment of the support along the centre beam, at which a locking pin 36 carried by the block 24 can enter one of the apertures 18 in the centre beam.  
30 Thus, the locking pin 36 can enter a centre beam aperture 18 when the longitudinal position of the support is appropriately selected, according to the requirement of

the user, by matching visible marking 38 on the support with one of a series of visible markings 40 on the centre beam. In such a position, the starting block 24 can pivot in a transverse plane about the pivot axle 28, into an upright position relative to the support 22.

The catch 30, in the form of a slotted slide, is then able to slide downwardly relative to the starting block, the abutment 32 moving past the part 34 of the support 24 to be brought into engagement with the lateral face thereof, thus blocking pivotal movement of the starting block in a direction which would withdraw the locking pin 36 from the aperture 18. The starting block 24 is thus locked against movement relative to the centre beam, not only in the longitudinal direction, but in both directions perpendicular to the longitudinal direction.

However, when the catch 30 is lifted, the abutment 32 is freed from the part 34 of the support 24 and the block 22 can be transversely pivoted, as exemplified by Figures 4 and 7, to withdraw the locking pin 36 and enable sliding movement of the support 22 along the centre beam to a fresh position of adjustment. During such longitudinal adjustment, the starting block 24 is held in an inclined position relative to the support, the upper part of the block being tilted inwardly over the pivot axle 28 towards the centre of the centre beam. Adjustment of the starting block on one side of the centre beam, is, of course, independent of adjustment of the starting block on the other side of the centre beam.

As a further convenience of adjustment for the user, shown in Figures 8 to 10, the foot plate component 26 of the starting block 24 is adjustable relative to the principal

component 42 of said block to enable the angle of inclination of the plate to be changed.

For this purpose, the foot plate component 26 is hinged to the principal component 42 about a transverse pivot axis 44. The foot plate component 26 includes stepped side flanges 46 engageable by a locking bar displaceably carried by the principal component 42 of the starting block. A pivotally mounted locking element 50 is rotatable to bear on the locking bar 48 and lock it into engagement with any one of the steps of the side flanges 46 of the foot plate component 26, thereby to lock the foot plate component in a chosen position of adjustment in which the surface of the foot plate lies at an angle suited to the particular user.

It will be appreciated that the embodiment above described with reference to the drawings may be modified in various ways within the scope of the invention hereinbefore defined.

In a modification (not shown), the axis 44 is lower. Pressure towards the lower edge of the foot plate component 26 no longer tends to cause the latter to move to a more upright position, so in this modification the locking element 50 is dispensed with.

Claims

1. A starting block assembly comprising a centre beam and a pair of starting blocks longitudinally slidable along opposite sides thereof, wherein locking means carried by the centre beam and each block cooperate so that, in any one of a series of positions of adjustment of starting block along the centre beam, the block is locked thereto not only against movement in the direction along the beam, but in both directions perpendicular to the length of the beam.
2. A starting block assembly comprising a centre beam and starting blocks longitudinally slidable along opposite sides thereof, the beam being apertured at a series of positions along the length thereof to receive a locking pin which is carried by each block and which enters an aperture by lateral movement in any one of a series of selected positions of longitudinal adjustment of a block along the centre beam.
3. A starting block according to claim 1 or 2, wherein each block is carried by a supporting member which engages the centre beam with freedom for movement only in the longitudinal direction of the beam, and the block is attached to the corresponding supporting member through a pivotal connection which permits the block to tilt relative to the supporting member in a plane normal to the length of the centre beam.
4. A starting block according to claim 3, wherein the

pivotal connection has a pivot axis above and parallel to the beam.

5. A starting block according to claim 3 or 4, wherein a catch is movable between two positions, in one of which, enabled only in the selected positions of longitudinal adjustment of the block, a locking pin on the block enters an aperture in the centre beam and an abutment carried by the catch engages the supporting member to prevent rotation of the block about its pivot, thereby locking the pin in the apertures, in the other position of the catch, the abutment being released from the supporting member to free the block for rotation relative to its support, whereby the pin can be withdrawn from the aperture to enable the supporting member, whilst carrying the block in its turned position, to be longitudinally adjusted along the centre beam.

6. A starting block according to claim 5, wherein the catch is a slotted slide carried by the block and the abutment blocks movement of the slide from said other position to said one position except when the locking pin in the block is aligned with a centre beam aperture, thereby to permit the block to assume its operative (upright) position relative to the supporting member and centre slide.

7. A starting block according to any of claims 4 to 6, wherein cooperating markings are provided on the supporting member and the centre beam to facilitate selection of the longitudinal positions of adjustment of the support (and block) in which the support (and block) are locked to the centre beam.

8. A starting block according to any of the preceding claims, wherein each starting block comprises a principal component and a foot plate component, the foot plate component being pivotally carried by the principal component to enable its angle of inclination to be adjusted about a horizontal axis transverse to the length of the centre beam.
9. A starting block according to claim 8, wherein said adjustment is enabled by a stepped plate forming part of the foot plate component, which stepped plate is engaged by a locking bar displaceably carried by the principal component and lockable in engagement with a step by means of a rotating locking element also carried by the principal component.
10. A starting block constructed and arranged substantially as herein particularly described with reference to the accompanying drawings.